

2018 ANNUAL REPORT

innovations

in sustainable agriculture





“This project was about supporting farmers in bringing fresh food to people who would otherwise not have access and, at the same time, maintaining a financial bottom line that supports our families. We were very excited to put our model into print so that other farmers can replicate this exciting development that makes food a right and not a privilege.”

Leah Penniman

Soul Fire Farm, Grafton NY

Farmer Grant Recipient:

“Economic viability for the farmer, fresh food for low-income families: A manual” (FNE17-879)

Northeast SARE Staff

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National Representative

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national program leaders for
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Our programs are offered to all without regard to race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or familial status. SARE is funded by USDA NIFA. USDA is an equal opportunity provider and employer.

About Us

The Northeast Sustainable Agriculture Research and Education (SARE) Program offers competitive grants to farmers, educators, service providers, researchers and others to address key issues affecting the sustainability of agriculture throughout our region.

The Northeast region includes Connecticut, Delaware, Massachusetts, Maryland, Maine, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, West Virginia, and Washington, D.C.

We currently offer the following grant programs:

- Farmer
- Partnership
- Graduate Student
- Research and Education
- Research for Novel Approaches
- Professional Development Program
- State Programs

Northeast SARE is one of four regional SARE programs funded by the USDA National Institute of Food and Agriculture.

Northeast SARE's outcome statement:

Agriculture in the Northeast will be diversified and profitable, providing healthful products to its customers; it will be conducted by farmers who manage resources wisely, are satisfied with their lifestyles, and have a positive influence on their communities and the environment.

On cover: Sprouted barley getting prepared for malting. Right: Strawberry cultivars, courtesy of Anna DeVitto, University of New Hampshire. All other photos by Northeast SARE staff unless otherwise noted.



FROM OUR REGIONAL COORDINATOR

The wealth of Northeast SARE

It's not easy to pick projects to highlight in Northeast SARE's Annual Report. We want to reflect the breadth of our project portfolio, but that's simply not possible when faced with a such a cornucopia of topics that our grantees are exploring.

Our projects address all types of farm products, including dairy, fish, grains, hops, tree fruit, vegetables and everything in between. They also engage many types of farming platforms, from small to large, urban and rural, organic and conventional, mostly land-based but sometimes floating in the ocean. Further, our projects are led by a variety of talented people: farmers, educators, students and scientists. In short, sustainable agriculture is a really big tent and our program reflects that.

We rely on the wisdom of our Administrative Council and Technical Committee to consider the pool of possibilities that come to us in proposals each year, and to select the very best ideas and approaches for improving the economic, environmental and social well-being of agriculture in the Northeast.

The vast majority of funded projects yield information in support of that goal, the evidence for which can be found in the final reports submitted by our grantees. Our challenge for this publication is to wade through the wealth of information generated by projects completed in the past year, and share just a sampling to describe our embarrassment of riches. As my grandmother used to say, "Everyone should have such problems!"

Vern Grubinger





Photo courtesy of Rafael Valentin, Rutgers University

“This project would not have succeeded without the funds from the SARE grant. When I submitted the grant proposal, it was a crazy idea that many did not think would even work...These funds gave me the opportunity to try my crazy idea and, as a result, a fascinating and new research direction was created for me.”

Rafael Valentin

Rutgers University

Graduate Student Grant Recipient:

“Development of a high-resolution surveillance protocol using eDNA for detection of brown marmorated stink bugs” (GNE15-112)

Northeast SARE's AC & TC committees make grant-making possible

As we start another year of grant-making, it seems fitting to send a hearty acknowledgement to two important committees at Northeast SARE: the Technical Committee (TC) and Administrative Council (AC). These leadership groups make our grant programs go 'round; put simply, Northeast SARE would not be the unique grant-making program it is without them. We greatly appreciate the dedication of these individuals--who represent the diversity of farming types, academic disciplines and geographic locations that make up our agricultural community--to keep the program innovative and responsive to the needs of farmers throughout the Northeast.

The Technical Committee is a group of farmers, Extension educators, researchers, non-profit and government staff, and other professionals who work with farmers. Each year, TC members serve on grant review panels to contribute their experience and expertise to review and rank proposals for all of our grant programs. These recommendations are then provided to the Administrative Council for final award selections.

The Administrative Council is Northeast SARE's leadership committee. AC members also review and evaluate grant proposals and, importantly, help guide program and policy development as well. The 2018 list of Administration Council members follow. Thank you TC and AC members!

2018 Northeast SARE Administration Council

- Brent Beidler, Beidler Family Farm, Randolph Center, VT
- Kristy Borrelli, Pennsylvania State University, University Park, PA (Professional Development Program Liaison)
- Richard Brzozowski, University of Maine Cooperative Extension, Orono, ME
- Zachary Evans, MidAtlantic Farm Credit, Salisbury, MD
- Wesley Dean/Rob Hedberg/Kim Kroll, Sustainable Agriculture Research and Education Program, Washington, D.C.

- Sarah Goslee, USDA-ARS, University Park, PA
 - Clare Hinrichs, Pennsylvania State University, University Park, PA
 - Dean Hively, USGS Eastern Geographic Science Center, Beltsville, MD
 - Robert Koethe/Andrea Szylvian, EPA New England, Region 1, Boston, MA
 - Nathan L'Etoile, Four Star Farms, Northfield, MA
 - Rose Ogutu, Delaware State University, Dover, DE
 - Amy Ouellette, University of New Hampshire Cooperative Extension, Durham, NH (Chair)
 - Talmage Petty, Hollywood Oyster Company, Hollywood, MD
 - Mark Powell, Maryland Department of Agriculture, Annapolis, MD
 - Kristen Saacke Blunk, Headwaters LLC, Richmond, VA
 - Hannah Smith-Brubaker, Village Acres Farm, Mifflintown, PA
 - Andrew Smyre, Anchor Ingredients Company, Mohrsville, PA
 - Elizabeth Spellman, Agrarian Trust, New Castle, VA
 - Mikel Williams Hawkins, USDA-NRCS, Annapolis, MD
 - Thomas Vogelmann, University of Vermont, Burlington, VT
- Northeast SARE leadership committees and staff strive to better understand the diversity of agriculture and needs of farmers throughout our region through annual farm visits. In 2018, the group (including TC, AC, state coordinators and staff pictured below) learned more about farming on and in Maine's seacoast.





“The SARE grant was very helpful in bringing new native shrub products to nursery growers in the Northeast.”

Jessica Lubell

University of Connecticut

Research and Education Grant

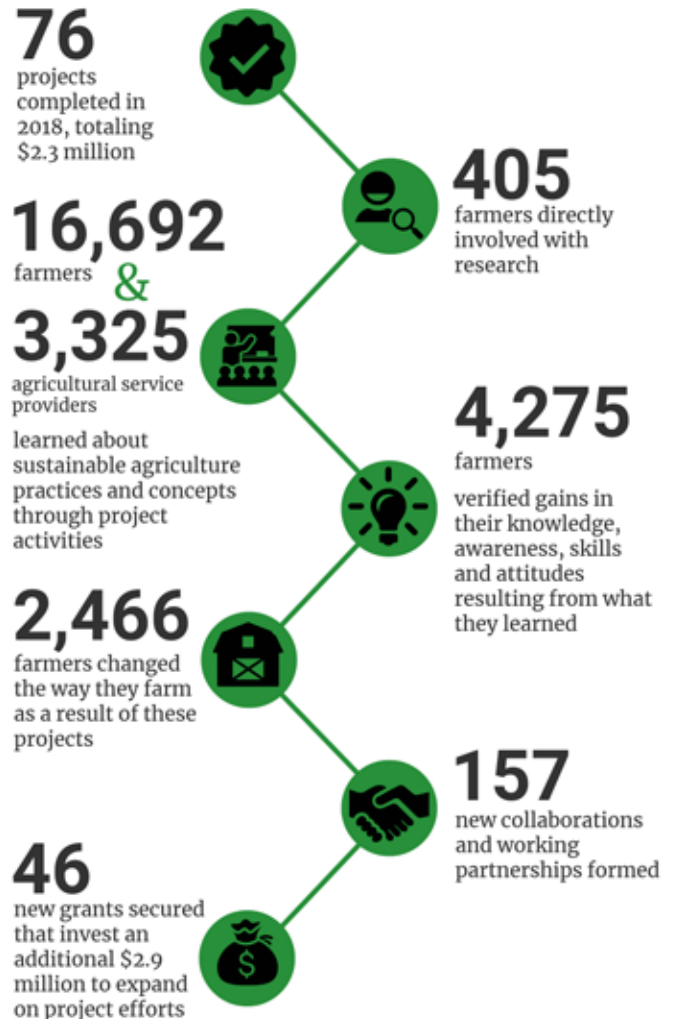
Recipient: *“Developing adaptable native shrubs for the green industry”*
(LNE13-324)

Photo courtesy of Sheila Foran, University of Connecticut

Program results: A look back at 2018

During the 2018 grant cycle, Northeast SARE awarded \$3,597,330 in competitive grants to conduct 90 projects throughout the Northeast and mid-Atlantic. An additional \$643,857 was awarded to 15 state SARE programs housed at each land grant university across the region to conduct professional development and SARE outreach activities. A full listing of 2018 funded projects appear on pages 18 to 27. While these projects are busy conducting research, generating new information and conducting farmer outreach, Northeast SARE staff have been monitoring projects to their end, tracking project successes and closing the loop on our grant investments.

Seventy-six projects were completed between October 2017 and October 2018, totaling \$2,302,068. They included 7 Research and Education projects, 4 Professional Development projects, 22 Farmer grants, 22 Partnership grants, and 21 Graduate Student projects. These projects addressed a wide span of topics including developing maple tubing sanitation practices, podcasts on soil health, farmer equipment sharing strategies, and pathogen-based protocols to combat clinical mastitis in dairy cattle. A sampling of projects completed in 2018 appear over the next few pages. In total, these projects trained 16,692 farmers and 3,325 agricultural service providers. As a result, 2,466 farmers made on-farm changes as a result of what they learned. ■



Maine training focuses on interpersonal relationships

Providing farmers with expert advice on production and farm management topics is the focus of much of the work conducted by Extension educators, nonprofit staff and other agricultural service providers. But what happens when the conversation with farmers veers beyond soil health, agronomy and animal husbandry to questions around communication, decision-making, goal-setting and time management?

To help agricultural service providers better navigate these topics with their farmer clients, University of Maine Cooperative Extension's human development specialist Leslie Forstadt focused her Northeast SARE Professional Development Program grant on interpersonal relationship skill-building.

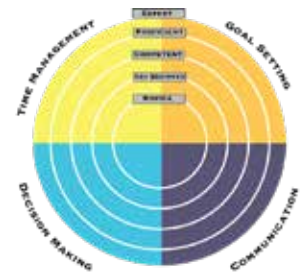
To start the project, Leslie and her team conducted farmer focus groups to gain a better understanding of interpersonal needs that farmers have at different stages of their farms' development.

Over the course of the project, 53 providers received training. Each training covered aspects of farmer typology (from novice to expert), built provider's skills to act as "guides" or active listeners, and

practiced skill-building related to communication, decision-making, goal-setting and time management. About half of the participants reported that they used the tools developed by the project in one-on-one consultations with more than 87 farmers.

As a result of the project, one participant said, "The active and effective listening exercises in the training were critical in helping me hone my interpersonal communications methods. As a service provider I am now much more aware of how my listening/feedback is interpreted by our customers."

Another said, "Having the broader first-hand information of what farmers reported they need and/or how they see what makes a farmer/farm successful has made me a better practitioner... And, having knowledge about the development cycles and learning stages has been huge in increasing my depth of knowledge and reminding me that 'not all beginning farmers' are the same." ■



PARTNERSHIP PROJECT HIGHLIGHT: ONE16-269

Guild by association: Partnership grant organizes Maryland cheesemakers

Although consumer demand for local Maryland Artisanal and farmstead cheeses is high, state regulatory hurdles have created significant barriers for this emerging industry. Working with Ginger Myers, agricultural marketing specialist with the University of Maryland Extension, a committed group of farmstead cheese producers and agriculture support specialists teamed up to form the Maryland Cheesemakers' Guild to provide a common voice on regulatory issues as well as provide educational and marketing opportunities to help support the industry's growth.

With support from a Northeast SARE Partnership grant, the group drew on the experiences from 13 cheesemaker guilds scattered throughout the U.S., keying in on their organizational structures, member activities, and educational resources provided. The team also drew on Maryland's Brewer and Distiller guilds, focusing on ways these guilds have navigated

regulatory issues within the state. The team then designed the membership structure of the guild and a business plan for its operation.

The Guild now has a formal structure, Board of Directors and a statewide membership. The team built marketing materials aimed at both potential members and consumers, and it expanded the Guild website at: www.mdcheese.org. The team also collected data on key issues facing producers and worked with members, partner guilds and affinity groups to promote the Guild and local cheeses through festivals, events and a Maryland cheese contest.

While regulatory hurdles are still being addressed, the Maryland Cheesemakers' Guild now has the organizational structure and leadership in place for addressing production, regulation, and marketing challenges, and have a plan for raising public awareness of locally produced cheese products. ■



Photo courtesy of Maryland Cheesemakers' Guild, www.facebook.com/Maryland-Cheese-Guild-183446931713735/

FARMER PROJECT HIGHLIGHT: FNE18-893

High tech avian control takes flight at Elliot Farm

For vegetable and grain farmers across the region, pest management means tackling weeds, insects, diseases...and birds. Management of flocking birds like red-winged blackbirds, starlings, grackles and crows can be particularly challenging; most are protected by the Migratory Bird Treaty Act and common



Ken Elliot and his sister, Deanna, of Elliot Farm

management techniques like pyrotechnics and distress calls vary in effectiveness, sometimes distressing concerned farm neighbors more than the birds! Besides, birds are farmers' friends during the nesting season when they feed primarily on insects.

It's during the harvest season in late summer through winter when birds shift their diets to grains and seeds. That's not good news for farmers like Ken Elliot of Elliot Farm in Lakeville, Massachusetts. Ken farms with his dad and sister on their family farm that produces sweet corn as a primary crop.

Despite efforts to keep birds at bay using balloons, distress calls, bird repellent, reflecting tape and netting, during the 2016 season, Elliot Farm lost 80% of its sweet corn crop to bird damage, estimated at \$18,000 in lost product.

So Ken was excited to join a laser scarecrow feasibility study, conducted by University of Rhode Island's Rebecca Brown under a Northeast SARE Partnership grant.

The project tested the efficacy of automated laser "scarecrows" that use moving green laser beams to frighten birds. Ken and 2 other





Left, the laser scarecrow prototype in the field. Above, Ken describes his Farmer Grant project. Right, Ken shows the electronics board of the laser scarecrow unit.

farmers participated in the project where the team tested the lasers on 6 sweet corn fields in peri-urban locations. Although the scarecrows were found to be highly effective at repelling birds from farm fields, the laser prototypes used during the study broke multiple times during the season, affecting their ultimate efficacy on the commercial farms.

However, based on his experiences with Brown's project and the potential of laser scarecrows for bird damage control, Ken was inspired to seek his own Northeast SARE grant. He received a 2018

Farmer Grant to design and manufacture a laser scarecrow prototype with the goal of keeping the cost per unit under \$500 as an affordable pest management strategy for farms their size.

Ken worked with engineers at Wentworth Institute of Technology on designing the prototype as well as researching relevant laser technology regulations to ensure the unit was in legal compliance.

From July to October, they tested 9 units on 40 acres of sweet corn on the farm.

Elliot Farm reported a reduction in bird

damage, down to 20% at the height of bird season. They found if the lasers were used in conjunction with bird distress calls, the damage was further reduced to just 8%. Ken noted that it was particularly important to install the laser scarecrows (and other bird repellent tools) prior to corn ripening to deter the birds from ever entering the field.

Elliot Farm compiled their results and developed a how-to build your own laser manual to share with other farmers. The manual--that includes parts lists; step-by-step instructions on the

electronics components, laser alignment and termination, and overall assemblage, as well as laser safety and legal considerations --is available at: deannaelliott.wixsite.com/lasersc scarecrow. The plans may be freely used to make laser scarecrows for personal use.

Ken and his family concluded that with this technology, small-scale farms can increase the sustainability and viability of their agricultural enterprises through this affordable bird repellent tool.

They say that Elliot Farm will now be using this technology to mitigate bird damage on their sweet corn acreage. ■



RESEARCH & EDUCATION PROJECT HIGHLIGHT: LNE14-332

Cornell team digs into cover crops as livestock feed

Throughout the Northeast, cover crops are now widely planted to protect and build soils. But, researchers and farmers alike are interested in discovering additional benefits that cover crops can provide, including growing them as livestock forages.

Cornell University agronomist Quirine Ketterings conducted her Northeast SARE Research and Education project to better understand the incorporation of winter cereal cover crops—triticale, winter rye and wheat—into silage corn rotations. This double

crop system enables farmers to provide both corn and cover crops as livestock feed. Because growing cover crops as dairy forages means they need to be managed like cash crops, Quirine and her team were particularly interested in learning the nitrogen (N) needs of these covers during green-up. Nitrogen management is important to not only gain good yields but is also a key factor in achieving optimal dietary protein as a dairy feed.

The project team installed 19 field trials on farms across New York to determine optimum

N rates of winter cereal cover crops when double cropped with silage corn. Further, Quirine expanded the team to include 47 farmers and 21 farm advisors (extension, government agencies, private sector consultants) allowing the project to collect similar on-farm data on an additional 44 trial sites throughout the state.

Research results showed that site characteristics play a role in N needs for winter cereals grown for forage. Therefore, fields need to be evaluated on an individual basis to determine whether or not N should be applied in the spring.



Dr. Quirine Ketterings takes soil sample in field of cover crops. Photos courtesy of Quirine Ketterings, Cornell University.



From the collection and analysis of yields, soil and forage quality, cover crop planting date, and site characteristics (like tile drainage, soil types and fertility history), the team developed a N recommendation system for growing winter cereal covers for forage. They also created an Excel calculator to estimate nutrient levels of winter cereal cover crops.

In addition, the team conducted an economic analysis of growing cover crops in a double crop system. They found

that winter cereals can be grown profitably in corn rotations even when fertilizers are needed or silage yields are slightly reduced. If winter cereal covers are used for forage, they should be managed as a crop with attention to planting dates, fertility management, and harvest quality.

As a result of the project, eleven farmers made on-farm changes to expand their use of cover crops, use double cropping and/or change N application rates

to the winter cereals at green-up. Farmer successes are highlighted in case studies at: nm-sp.cals.cornell.edu/NYOnFarmResearchPartnership/DoubleCrops.html.

One farmer collaborator said, “The on-farm research really helps to see what can work. Double cropping with winter triticale is great for my feed program and fits in beautifully with short rotations that keep soil covered to help my farm stay productive into the future.” ■

Graduate student studies livestock feed value of cover crops

Dovetailing with Quirine Kettering's Research and Education project, Cornell University student Sarah Lyons recently completed her Northeast SARE Graduate Student grant (GNE15-108) that looked at livestock feed quality characteristics of winter cereal cover crops grown at different N rates. She found that N rates affected yield and crude protein levels in the feed, while fiber and digestibility rates were largely unaffected. Her study revealed that cover crop forage quality does change when ensiled, highlighting the importance of analyzing stored feeds. Sarah also looked at feed substitution—replacing traditional feedstocks like corn silage with these winter cereals—and found that 100% substitution affected metabolizable energy, suggesting the need for balancing livestock feed rations when using these crops. Her research showed that winter cereal cover crops are viable livestock feeds when properly managed, providing dairy farmers with valuable extra sources of farm-raised forages, while protecting soil quality. ■

GRADUATE STUDENT PROJECT HIGHLIGHT: GNE16-136

RI student studies production and marketing potential of amaranth

Amaranth is a traditional leaf vegetable in over 50 countries, yet little research exists on growing this crop in temperate climates like the Northeast U.S. University of Rhode Island student Sarah Schweig saw the potential that this crop might hold for farmers looking to diversify their farms in our densely populated, ethnically diverse region. Therefore, the goal of her Northeast SARE Graduate Student grant was two-fold: develop production protocols for growing vegetable amaranth under Northeast conditions and study consumer demand for this crop with an eye to varieties of interest to Rhode Island farmers' market shoppers.



Above, Sarah Schweig harvests amaranth trials. Opposite, Sarah shows amaranth varieties to farmers' market shoppers. Photos courtesy of Heather Faubert, University of Rhode Island.

From previous evaluations of 10 vegetable amaranth varieties grown under various conditions, Sarah selected 4 varieties—Miriah, Green Pointed Leaf, Red Callaloo and White Leaf—for both her production and market studies. Her variety trials evaluated yields by planting dates under low tunnels, black plastic mulch and bare soil conditions. Sarah presented her results and tips for growing amaranth in a video at: youtu.be/SmDCXC1ToBI.

To assess the potential market demand for vegetable amaranth, Sarah conducted a consumer survey at a local farmers' market where she asked shoppers about their familiarity with amaranth, variety preferences, overall frequency of purchasing fresh vegetables at the market, and individual demographic information. She found that 75% of respondents were familiar with at least one amaranth variety and 69% preferred a variety with which they were already familiar. Although the survey results cannot be generalized, they suggest the importance of identifying and understanding target markets for amaranth.

Sarah reflected on her experience conducting the project, "The goal of assessing production



systems was a beneficial and challenging exercise in identifying the numerous factors involved in decision-making for growers. Through this exercise, I developed a solutions-based understanding of sustainability in which the balance of environmental, social and economic considerations may vary by farm, community, region or season... I think this attitude is necessary for producing responsive, flexible progress in sustainable agriculture and food systems." ■

National SARE conference reflects on past 30 years and looks forward to the future

More than 900 farmers, educators and other sustainable agriculture enthusiasts—including over 100 folks from the Northeast—participated in the 2018 “Our Farms, Our Future” conference, a national gathering held in St. Louis to celebrate the 30th anniversaries of both SARE and NCAT/ATTRA sustainable agriculture programs.

The three-day event included more than 35 breakout sessions, bringing close to 110 speakers together to share their diverse ideas about the future of sustainable agriculture. The conference also featured poster sessions that highlighted 46 Northeast SARE-funded projects.



Northeast SARE graduate student grant coordinator Candice Huber poses with graduate student poster presenters under the iconic St. Louis gateway arch.

Of note, conference organizers recorded “story-corps” style conversations among a diversity of sustainable agriculture community members across the country. These discussions about how we got here and where we’re headed are being released monthly through a podcast series.

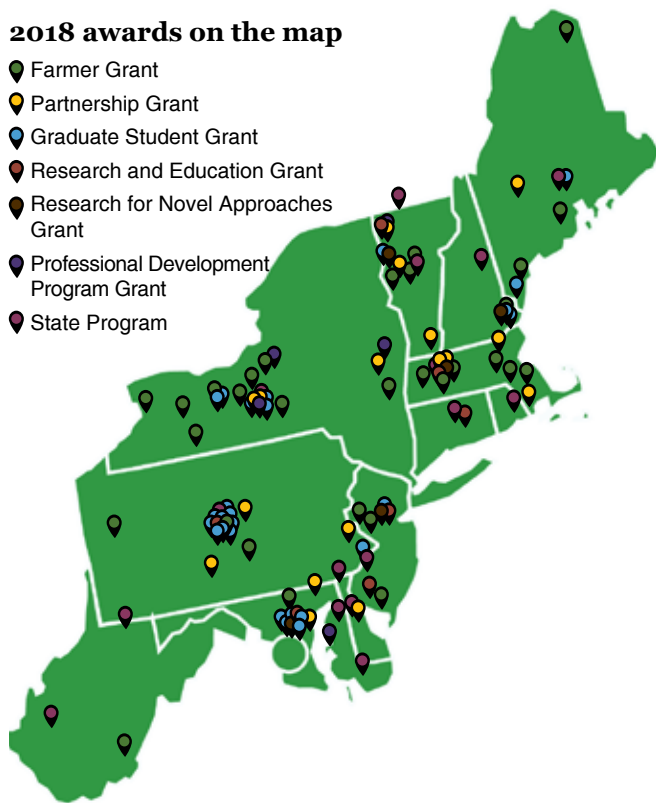
All conference materials—including posters, podcasts and videos of workshop sessions—are online and available at: ofof.sare.org. ■

2018 awards by state

During the 2018 grant cycle, Northeast SARE awarded \$3,597,330 in competitive grants to conduct 90 projects throughout the Northeast. An additional \$643,857 was awarded to 15 State Programs housed at each land grant university across the region to conduct professional development and SARE outreach. See the following 2018 awards, listed by state of project coordinators (note that many projects involve multi-state programming). Find more information about these and other SARE-funded projects by searching project name, number or coordinator on SARE's national database at: projects.sare.org/search-projects.

2018 awards on the map

-  Farmer Grant
-  Partnership Grant
-  Graduate Student Grant
-  Research and Education Grant
-  Research for Novel Approaches Grant
-  Professional Development Program Grant
-  State Program



Connecticut

RESEARCH AND EDUCATION
GRANT: LNE18-363

Improved Nitrogen Management for Corn using Aerial Images, Adapt-N, Chemical and Biological Soil Tests, and Cover Crops

Karl Guillard, University of Connecticut, Storrs CT
\$241,570

STATE PROGRAM: NECT17-001

Nutrition's Role in Sustainable Livestock Production Practices

Joe Bonelli, University of Connecticut, Storrs CT
Program Associates: Rachel Bospuda and Jean King
\$75,110

Delaware

PARTNERSHIP GRANT: ONE18-317

Characterization of Gastrointestinal Nematode Anthelmintic Resistance on Small Ruminant Farms in Delaware

Kwame Matthews, Delaware State University, Dover DE
\$14,974

STATE PROGRAM: NEDE17-001

Beginning Farmer Workshops

Dan Severson, University of Delaware, Newark, DE
\$16,330

STATE PROGRAM: NEDSU17-001

Cover Crop and Soil Health Training for Agriculture Service Providers in Delaware and the Eastern Shore of Maryland

John Clendaniel, Delaware State University, Dover, DE
Program Associate: Jason Challandes
\$83,332



Massachusetts

FARMER GRANT: FNE18-890

Developing Commercial Cordyceps Production

Willie Crosby, Fungi Ally, Hadley MA
\$14,996

FARMER GRANT: FNE18-893

Laser Scarecrow Prototype

Kenneth Elliot, Elliot Farm, Lakeville MA
\$14,973

FARMER GRANT: FNE18-902

Adaptation of No-Till Transplanting as an Innovative Method to Improve Cranberry Farm Sustainability

Jeffrey LaFleur, Mayflower Cranberries LLC, Plympton MA
\$14,903

FARMER GRANT: FNE18-904

Determining Proper Feeder Space Requirements for Pasture-Raised Laying Hens and Broilers

Peter Lowy, Codman Community Farms, Lincoln MA
\$9,566

FARMER GRANT: FNE18-912

Effectiveness of Mixed Perennial Groundcovers in Establishing Hazelnut Hedgerow Systems in the Northeast

Sara Tower, Nutwood Farm, Cummington MA
\$15,000

FARMER GRANT: FNE18-913

System Modifications and Varieties for Extending the Organic Strawberry Plasticulture Ripening Season in MA

Ryan Voiland, Red Fire Farm, Montague MA
\$12,303

PARTNERSHIP GRANT: ONE18-311

Massachusetts Employee Manual Template: A Tool for Improving Employee Management on Farms

Margaret Christie, Community Involved in Sustaining Agriculture, Inc. (CISA), South Deerfield MA
\$15,000

PARTNERSHIP GRANT: ONE18-314

Training Beginning Farmers in Crop Production Skills to Build Climate Resilience

Jennifer Hashley, New Entry Sustainable Farming Project, Lowell MA
\$15,000

PARTNERSHIP GRANT: ONE18-324

The Weed Weasel Prototype: Electric Walking Tractor

Lu Yoder, Woodmetalcanvas, Westport MA
\$14,480

PARTNERSHIP GRANT: ONE18-325

Improving Ground Cover Selection and Competition Management in the Establishment of Productive Riparian Agricultural Buffers

Keith Zaltzberg, Regenerative Design Group, Greenfield MA
\$14,995

RESEARCH AND EDUCATION GRANT: LNE18-365

Increasing Grower Adoption of Ecologically-based Pest Management Strategies to Improve Quality and Yield of Brassica Crops

Susan Scheufele, University of Massachusetts Amherst, Hadley MA
\$198,754

RESEARCH FOR NOVEL APPROACHES: LNE18-370

Extending the Season: New Frozen Products for a New Market

Amanda Kinchla, University Massachusetts Amherst, Hadley MA
\$199,524

STATE PROGRAM: NEMA17-001

Mentoring for Extension Educators in Integrated Crop Management

Katie Campbell-Nelson, University of Massachusetts, Amherst MA
\$19,426



Maryland

FARMER GRANT: FNE18-900

Use of Rate-of-Gain and Dry Lot to Maintain Parasite Anthelmintic Susceptibility in Bluefaced Leicester Maryland Lambs

Andrew Keller, Vista View Farms, Damascus MD
\$13,658

GRADUATE STUDENT GRANT: GNE18-167

Evaluation of Biochar as an Additive for Biogas Desulfurization in Dairy Manure Digesters

Abhinav Choudhury, University of Maryland, College Park MD
Advisor: Stephanie Lansing
\$14,950



Photo courtesy of Alessandra Rellini, Agricola Farm

GRADUATE STUDENT GRANT:
GNE18-177

Movement of Spiders from Drainage Ditches to Agricultural Fields to Enhance Conservation Biocontrol

Dylan Kutz, University of Maryland, College Park MD
Advisor: William Lamp
\$13,684

GRADUATE STUDENT GRANT:
GNE18-178

Understanding Spotted Wing Drosophila's Role as a Vector for Fruit Rot Fungi in Fall Red Raspberries

Margaret Lewis, University of Maryland, College Park MD
Advisor: Kelly Hamby
\$14,994

GRADUATE STUDENT GRANT:
GNE18-185

Getting Legume Cover Crops to Work in Mid-Atlantic Field Crop Rotations

Cara Peterson, University of Maryland, College Park MD
Advisor: Katherine Tully
\$14,811

GRADUATE STUDENT GRANT:
GNE18-187

Evaluating the Effect of Potato Leafhopper Feeding on Biological Nitrogen Fixation in Alfalfa

Morgan Thompson, University of Maryland, College Park, College Park MD
Advisor: William Lamp
\$8,804

PARTNERSHIP GRANT: ONE18-313

Relationship Marketing in the Digital Age: Helping Farmers Grow Their Businesses Through Online Marketing

Juliet Glass, Maryland Farmers Market Association, Annapolis MD
\$14,495

PARTNERSHIP GRANT: ONE18-315

Evaluation of Hops Production in Maryland as a Sustainable Agricultural Enterprise

Andrew Kness, University of Maryland, Forest Hill MD
\$12,214

PROFESSIONAL DEVELOPMENT
PROGRAM GRANT: ENE18-151

Conservation Leasing Guide Education Series

Sarah Everhart, University of Maryland Francis K. Carey School of Law, St. Michaels MD
\$159,380

RESEARCH AND EDUCATION
GRANT: LNE18-366

Optimization of Starter Nitrogen Fertilizer Application for Corn Planted into a Cereal Rye Cover Crop

Katherine Tully, University of Maryland, College Park MD
\$199,790

STATE PROGRAM: NEUMES17-001

Demonstration of Successful Apple Orchard Establishment on the Eastern Shore of Maryland

FNU Naveen Kumar, University of Maryland Eastern Shore, Princess Anne MD
\$16,666

STATE PROGRAM: NEUMD17-001

Building Soil Health in Maryland through Agricultural Service Provider Education

Nevin Dawson, University of Maryland, Denton MD
\$83,850



Maine

FARMER GRANT: FNE18-897

Tree Leaf Fodder for Livestock: Transitioning Farm Woodlots to 'Air Meadow' for Climate Resilience

Shana Hanson, 3 Streams Farm, Belfast ME
\$15,000

FARMER GRANT: FNE18-901

Littleneck Clam and American Oyster Polyculture: Economic Viability and Nursery Technique

Jordan Kramer, Winnegance Oyster Farm, Portland ME
\$12,273

FARMER GRANT: FNE18-905

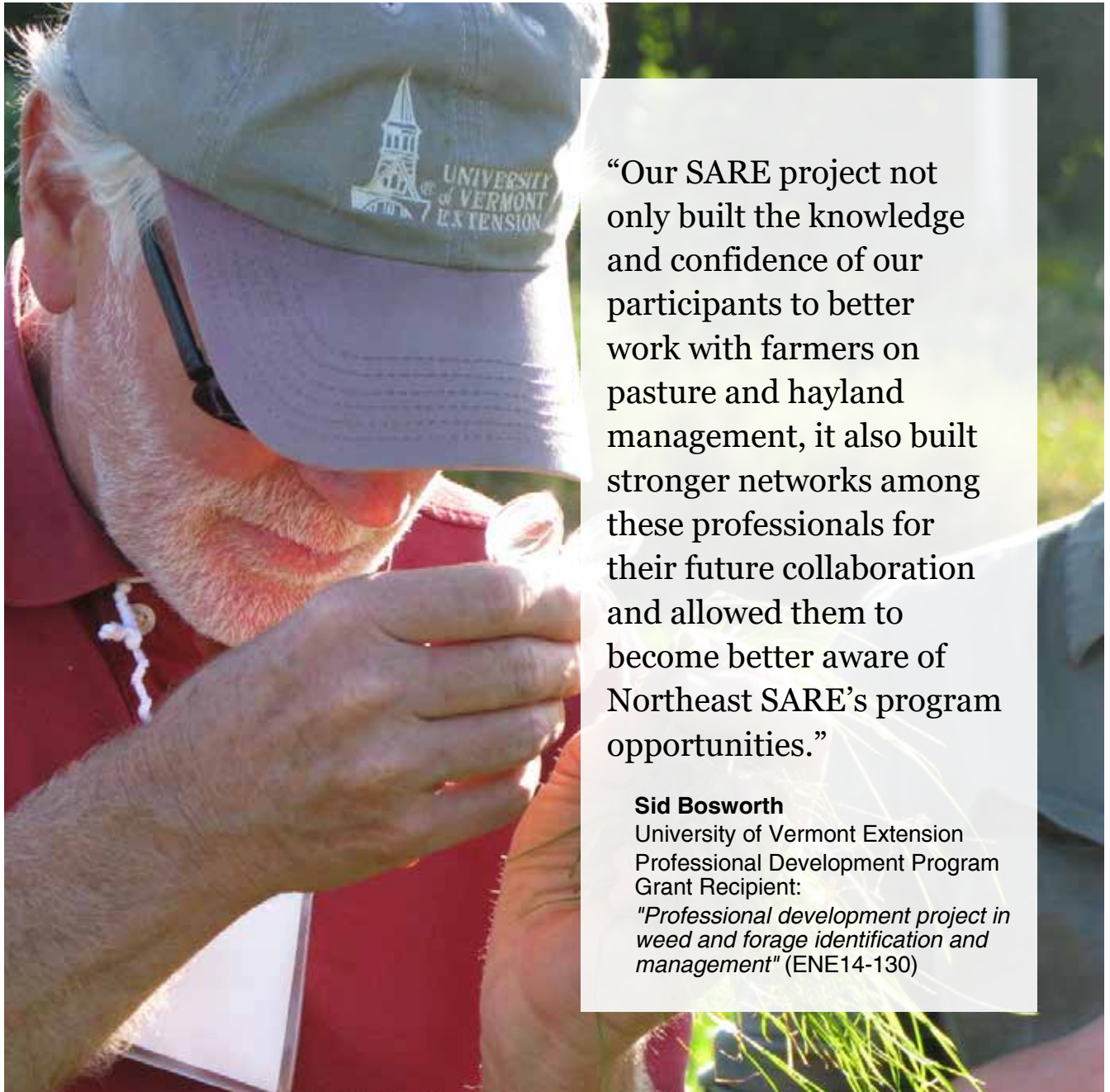
High Density Hybrid Plums: Innovation and Efficient Fruit Production for the Northeast

John O'Meara, O'Meara Family Farm, New Sweden ME
\$7,508

GRADUATE STUDENT GRANT:
GNE18-172

Improving Productivity of Casco Bay Kelp Farms Using Spatiotemporal Analysis of Coastal Nutrient Data

Gretchen Grebe, University of Maine, Scarborough ME
Advisor: Damian Brady
\$14,754



“Our SARE project not only built the knowledge and confidence of our participants to better work with farmers on pasture and hayland management, it also built stronger networks among these professionals for their future collaboration and allowed them to become better aware of Northeast SARE’s program opportunities.”

Sid Bosworth

University of Vermont Extension
Professional Development Program
Grant Recipient:

"Professional development project in weed and forage identification and management" (ENE14-130)



GRADUATE STUDENT GRANT:
GNE18-184

Innovative Resources for Small Ruminant Health

Sarah Paluso, University of Maine, Milford ME
Advisor: Anne Lichtenwalner
\$15,000

PARTNERSHIP GRANT: ONE18-322

More Maine Meat Chain of Custody Project

Tanya Swain, Maine Sustainable Agriculture Society, Farmington ME
\$14,998

STATE PROGRAM: NEME17-001

Strengthening Knowledge, Skills and Networks for Soil Security in Maine

Ellen Mallory, University of Maine, Orono ME
Program Associate: Tom Molloy
\$45,054



New Hampshire

FARMER GRANT: FNE18-914

Assessing No-Till Permanent Raised Beds for Mixed Vegetable Production on Marginal Soils

Jennifer Wilhelm, Fat Peach Farm, Madbury NH
\$14,965

GRADUATE STUDENT GRANT:
GNE18-169

Expanding Northeast Strawberry Production in Controlled Environment Agriculture with Naturally-Derived Nutrient Source

Anna DeVitto, University of New Hampshire, Durham NH
Advisor: Todd Guerdat
\$14,760

GRADUATE STUDENT GRANT:
GNE18-182

Harvesting Sap and Producing Syrup From Trees Other Than Maples, Birches, and Walnuts

David Moore, University of New Hampshire, Durham NH
Advisor: Heidi Asbjornsen
\$14,848

RESEARCH FOR NOVEL APPROACHES: LNE18-371

Expanding No-till Organic Vegetable Production through the Combination of High-residue Cover Crops and Solarizing Tarps

Richard Smith, University of New Hampshire, Durham NH
\$126,668

STATE PROGRAM: NENH17-001

Tech-Transfer for New Hampshire Beekeepers

Olivia Saunders, University of New Hampshire, Conway NH
Program Associate: Matt Coughlan
\$44,323



New Jersey

FARMER GRANT: FNE18-885

Comparison of Five Methods of Crop Thinning in Pinot Noir and their Effects on Fruit Composition and Wine Quality

Michael Beneduce, Beneduce Vineyards, Pittstown NJ
\$14,871

FARMER GRANT: FNE18-888

Optimization and Demonstration of Field Nursery Practices for Oyster Seed Cultivation in the Delaware Bay, New Jersey

Lisa Calvo, Sweet Amalia Oyster Farm, Newfield NJ
\$14,240

FARMER GRANT: FNE18-892

Analyzing the Profitability of Seasonal Wreath Production

Monica Drazba, Chickadee Creek Farm, Pennington NJ
\$5,223

GRADUATE STUDENT GRANT:
GNE18-181

Evaluating Native American Hazelnuts for Use as Cold Hardy Pollenizers in European Hazelnut Orchards

Alex Mayberry, Rutgers University, New Brunswick NJ
Advisor: Thomas Molnar
\$10,048



RESEARCH AND EDUCATION
GRANT: LNE18-362

Goldenberries: A New Fruit for CSA Farms and Farmers Markets

Edward Durner, Rutgers University, New Brunswick NJ
\$102,122

RESEARCH AND EDUCATION
GRANT: LNE18-364

An Area-Wide Pest Management Program to Improve Honey Bee Health in Blueberry and Cranberry Pollination Services

Dean Polk, Rutgers University, Bridgeton NJ
\$199,975

RESEARCH FOR NOVEL
APPROACHES: LNE18-369

Extend and Maximize Postharvest Quality of Strawberry

Thomas Gianfagna, Rutgers University, New Brunswick NJ
\$41,504

STATE PROGRAM: NENJ17-001

Using Demographic Information to Identify Specialty Crop Markets

Michelle Infante-Casella, Rutgers University, Clayton NJ
\$38,050



New York

FARMER GRANT: FNE18-887

Innovative and Affordable Methods of Managing Weeds in Strawberry Production

Megan Burley, Burley Berries and Blooms, Warsaw NY
\$10,399

FARMER GRANT: FNE18-889

Twenty-first Century Pastured Poultry

Nichki Carangelo, Letterbox Farm, Hudson NY
\$15,000

FARMER GRANT: FNE18-891

Cost-Benefit Analysis of Pastured Pig Weight Gains With and Without Added Protein Supplements

Angela DeVivo, The Piggery Inc., Trumansburg NY
\$14,852

FARMER GRANT: FNE18-894

Improving Compacted Soils with Stropharia Mushrooms

Alice Gallagher, Brady Farm, Syracuse NY
\$13,081

FARMER GRANT: FNE18-899

Innovation in Community Supported Agriculture through Collaboration with Specialty Producers

Peter Johnson, Rusty Bucket Mushroom, Buffalo NY
\$14,987

FARMER GRANT: FNE18-903

Hill Wicking in Fields for Natural Irrigation and Drainage

Louis Lego, Elderberry Pond Farm, Auburn NY
\$9,769

FARMER GRANT: FNE18-908

Creating and Capturing Synergies: Developing a Network of CEA Microgreen Growers in Western NY

Matthew Raiff, Fulmer Valley Farm, Andover NY
\$13,802

FARMER GRANT: FNE18-910

Developing a Device to Capture the Untapped Potential of Fly Larvae in Dairy Cow Manure Pits as Ingredients for Fish Feeds

Jeremy Sherman, Jerry Dell Farm, Dryden NY
\$6,173

FARMER GRANT: FNE18-915

Verjuice in the Hudson Valley

Ali Yaghoubi, Alistone vineyard, Hopewell NY
\$9,335

GRADUATE STUDENT GRANT:
GNE18-166

Comparative Analysis of Cover Crop Incentive Programs in the Northeast

Barbara Chami, Cornell University, Ithaca NY
Advisor: Matthew Ryan
\$15,000

GRADUATE STUDENT GRANT:
GNE18-171

Nutritional Therapy to Prevent Leaky Gut in Dairy Cattle Experiencing Endotoxemia

Ananda Fontoura, Cornell University, Ithaca NY
Advisor: Joseph McFadden
\$14,996

GRADUATE STUDENT GRANT:
GNE18-183

Evaluating Abiotic Factors Associated with Onion Maggot Control Failure in Northeastern Onion Production Systems

Erica Moretti, Cornell University, Geneva NY
Advisor: Brian Nault
\$14,984



Photo courtesy of Kate Harms

“This project was able to connect farming to wildlife conservation in a mutual benefit...with the Northeast being the first region to see dramatic losses in bat populations due to White-nose syndrome, it was refreshing to know the farmers of the region are eager to support the current population of bats.”

Kate Harms

Rodale Institute

Partnership Grant Recipient:

“Investigating bat activity in various agricultural landscapes to develop organic insect pest management”
(ONE16-260)

GRADUATE STUDENT GRANT:
GNE18-188

Wild Bees in the Trees: Pollen Analyses to Determine Wild Bee Foraging in Early Spring Canopies

Katherine Urban-Mead, Cornell
University, Ithaca NY
Advisor: Bryan Danforth
\$14,912

GRADUATE STUDENT GRANT:
GNE18-191

Low Tunnel Strawberries: Survey of Pest Incidence and Recommendations for Biological Control of Two-Spotted Spider Mite

Samantha Willden, Cornell
University, Geneva NY
Advisor: Gregory English-Loeb
\$14,988

PARTNERSHIP GRANT: ONE18-310

Improving Hop Harvest Timing in the Northeast

Stephen Hadcock, Cornell
Cooperative Extension, Albany
County, Hudson NY
\$13,856

PARTNERSHIP GRANT: ONE18-316

Using Detailed Customer Transaction Data from Farmers' Markets to Analyze Opportunities for Increased Sales

Matthew LeRoux, Cornell
Cooperative Extension- Tompkins
County, Ithaca NY
\$12,214

PARTNERSHIP GRANT: ONE18-321

Sheep-to-Shawl: Creating a Solution- Based Strategy that Addresses the Fragmented Fiber Production Infrastructure

Monika Roth, Cornell University
Cooperative Extension, Ithaca NY
\$15,000

PROFESSIONAL DEVELOPMENT
PROGRAM GRANT: ENE18-150

Reversing a Downward Trend in Customer Participation and Farmer Sales at Farmers' Markets

Diane Eggert, Farmers Market
Federation of NY, Fayetteville NY
\$145,242

PROFESSIONAL DEVELOPMENT
PROGRAM GRANT: ENE18-152

Farmland Advisors New Jersey: A Training Program for Professionals Working with Farmers to Access and Transfer Farmland

David Haight, American Farmland
Trust, Saratoga Springs NY
\$74,133

PROFESSIONAL DEVELOPMENT
PROGRAM GRANT: ENE18-153

From Classroom to the Field: Advanced Soil Health Training for New York Agricultural Service Providers

Jeff Ten Eyck, American Farmland
Trust, Saratoga Springs NY
\$145,305

STATE PROGRAM: NENY17-001

Baskets to Pallets II: Establishing a NYS Leadership Team of Wholesale Marketing Specialists

Violet Stone, Cornell University,
Ithaca NY
\$49,613



Pennsylvania

FARMER GRANT: FNE18-886

PA Queen Project and the HHBBC Field Test Mite-Biting Behavior using Backyard Scientists

Jeffrey Berta, Always Summer
Herbs, Slippery Rock PA
\$15,000

FARMER GRANT: FNE18-896

Aggregation and Cooperative Marketing Opportunities for Enhancing Chestnut Production and Conservation

Erik Hagan, Windswept
Agroforestry Farm, State College PA
\$13,180

FARMER GRANT: FNE18-911

Evaluation of Pasture Dragging as Non- Chemical Control Method for Filth Fly Pests of Pastured Beef Cattle

Matt Steiman, Dickinson College,
Carlisle PA
\$14,059

GRADUATE STUDENT GRANT:
GNE18-164

Assessing the Impact of Organic Farming Practices on Building Drought Resistant Soil

Abdelrahman Alfahham, University
of Pennsylvania, Philadelphia PA
Advisor: Alain Plante
\$14,346

GRADUATE STUDENT GRANT:
GNE18-165

Harnessing Forage Mixtures to Increase Ecosystem Services of Arthropod Predators and Weed Suppression

Julie Baniszewski, Pennsylvania
State University, State College PA
Advisor: John Tooker
\$14,987

GRADUATE STUDENT GRANT:
GNE18-168

How Does 40 Years of No-till Affect Soil Microbial Nitrogen Dynamics

Mara Cloutier, Pennsylvania State
University, University Park PA
Advisor: Mary Ann Bruns
\$14,964

GRADUATE STUDENT GRANT:
GNE18-173

Native Perennial Grasses in Multi- functional Riparian Buffers for Improving Water Quality and Farm Profitability

Stephanie Herbstritt, Pennsylvania
State University, University Park PA
Advisor: Thomas Richard
\$14,991

GRADUATE STUDENT GRANT:
GNE18-174

Sexuality and Sustainable Agriculture: Examining Queer Farmers' Quality of Life in Pennsylvania

Michaela Hoffelmeyer,
Pennsylvania State University,
University Park PA
Advisor: Kathleen Sexsmith
\$14,997

GRADUATE STUDENT GRANT:
GNE18-176

Ultrasensitive and On-field Detection of a Plant Virus by a Nanotube-filtering Device and Isothermal Amplification

Juan Francisco Iturralde Martinez,
Pennsylvania State University,
University Park PA
Advisor: Cristina Rosa
\$14,937

GRADUATE STUDENT GRANT:
GNE18-180

Combining Infection Sources, Periods, and Persistence into the Integrated Management of Bitter Rot on Apples

Phillip Martin, Pennsylvania State
University, University Park PA
Advisor: Kari Peter
\$14,992

GRADUATE STUDENT GRANT:
GNE18-186

Symbiotic Nitrogen Fixation in Non-legumes: N-supply, Yield and Quality Effects in Tomato and Pepper

Ryan Sebring, Pennsylvania State
University, University Park PA
Advisor: Sjoerd Duiker
\$14,850

GRADUATE STUDENT GRANT:
GNE18-189

Exploring Disease Pressure in Response to Climate Change

Joseph Walls, Pennsylvania State
University, State College PA
Advisor: Cristina Rosa
\$14,993

GRADUATE STUDENT GRANT:
GNE18-190

Sustainable Urban Agriculture in Pennsylvania: Assessing Best Practices for Historically Marginalized Farmers

Hannah Whitley, Pennsylvania State
University, University Park PA
Advisor: Kathryn Brasier
\$14,970

Partnership Grant: ONE18-309 Small-Scale Production Possibilities for Peanuts in Pennsylvania

Sarah Bay Nawa, Tuscarora
Organic Growers Cooperative,
Hustontown PA
\$3,516

PARTNERSHIP GRANT: ONE18-319

Effects of Unimproved Equine Manure Stacking on Soil and Groundwater Nutrients at Sites with Seasonally High Water

Rachel Onuska, Bucks County
Conservation District, Doylestown PA
\$14,795

PARTNERSHIP GRANT: ONE18-320

Developing Markets for Warm Season Grass within the Pennsylvania Farm Community

Michael Palko, Penn Soil RC&D
Council, Mifflinburg PA
\$14,993

RESEARCH AND EDUCATION
GRANT: LNE18-367

Carbon Gaps, Nitrogen Bulges, and Phosphorus Imbalances: In Search of Sustainable Soil Organic Matter Management

Charles White, Pennsylvania State
University, University Park PA
\$199,956

STATE PROGRAM: NEPA17-001

Establishing a Service Provider Network for Alternative Grain Crops in Pennsylvania

Kristy Borrelli, Pennsylvania State
University, University Park PA
\$44,408

Rhode Island

STATE PROGRAM: NERI17-001

Season Extension with Caterpillar Tunnels on Rhode Island Farms

Heather Faubert, University of
Rhode Island, Kingston RI
\$20,500

Vermont

FARMER GRANT: FNE18-895

Seakale: Commercial Opportunities for New Perennial Crops and Climate Smart Agriculture

Aaron Guman, Walking Onion
LLC, Middlesex VT
\$14,968

FARMER GRANT: FNE18-906

Swede Midge Control for Cruciferous Crops

Jaiel Pulskamp, Kettle Song Farm,
Worcester VT
\$8,735

FARMER GRANT: FNE18-909

Nutritional Contribution of Forage on Pasture-Raised Pigs

Alessandra Rellini, Agricola Farm,
Panton VT
\$3,163

GRADUATE STUDENT GRANT:
GNE18-170

Agricultural Best Management Practices to Mitigate Gaseous Carbon and Nitrogen Losses from a Zea Mays Silage System

Kyle Dittmer, University of Vermont, Burlington VT
Advisor: Carol Adair
\$15,000

GRADUATE STUDENT GRANT:
GNE18-179

Improving the Rotational Value of Field Pea as a Legume Cover Crop

Edward Marques, University of Vermont, Burlington VT
Advisor: Eric Bishop von Wettberg
\$15,000

PARTNERSHIP GRANT: ONE18-312

Understanding Quality Standards for Cereal Rye to Help Farmers Access Value-Added Markets for Malting, Distilling and Baking

Heather Darby, University of Vermont Extension, St. Albans VT
\$14,971

PARTNERSHIP GRANT: ONE18-318

Practical Strategies for Reducing Ammonia Volatilization from Urine-Derived Fertilizers

Abraham Noe-Hays, Rich Earth Institute, Brattleboro VT
\$14,938

PARTNERSHIP GRANT: ONE18-323

Vermont Maple in Every School Project

Abbie Nelson, Northeast Organic Farming Association of Vermont, Richmond VT
\$14,998

PROFESSIONAL DEVELOPMENT
PROGRAM GRANT: ENE18-149

Developing Technical Skills of Service Providers in the Northeast to Assist Farmers with Transition to No-Till

Heather Darby, University of Vermont, St. Albans VT
\$171,222

RESEARCH AND EDUCATION
GRANT: LNE18-361

Developing Corn Silage Systems to Meet the Needs of Cover Crops

Heather Darby, University of Vermont Extension, St. Albans VT
\$196,108

RESEARCH FOR NOVEL
APPROACHES: LNE18-368

Potential for a Pheromone Mating Disruption Program for the Invasive Swede Midge within Complex Annual Rotational Systems

Yolanda Chen, University of Vermont, Burlington VT
\$199,854

STATE PROGRAM: NEVT17-001

Enhancing Evaluation Capacity to Improve Sustainable Agriculture Programs and Outcomes in VT

Beth Holtzman, University of Vermont Extension, Barre VT
\$46,111



West Virginia

FARMER GRANT: FNE18-907

Here Comes the Sun: Solar Power as Energy Source in Remote High Tunnel Ventilation Systems

Tommye Rafes, T. L. Fruits and Vegetables LLC, Caldwell WV
\$14,246

STATE PROGRAM: NEWVU17-001

Enhancing the Viability and Profitability of Direct Sales and Agritourism Agripreneurs through Education, Clustering and Networking Opportunities

Doolaire Singh-Knights, West Virginia University, Morgantown WV
\$44,420

STATE PROGRAM: NEWVSU17-001

Growing Grant Writing and Management Capacity with WV Ag Service Providers to Support Our Ag Community

Barbara Liedl, West Virginia State University, Institute WV
\$16,664



Photo courtesy of Tommye Rafes



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